TROQ Electronic Co.,Ltd.
CRYSTAL UNIT SPECIFICATIONS

Customer	
Production Name	**OSC 3.2*2.5**
Customer P/N	**N/A**
TROQ P/N	R004000071
Revision	A
Print Date	**2023/5/11**

Drawn	Checked	Approved

HF RoHS Compliant RoHS Compliant

Pb used in sealing glass material is exempt from EU directive

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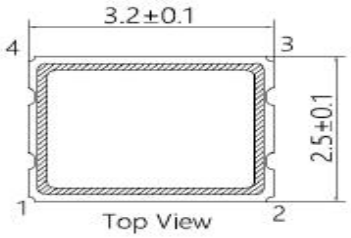
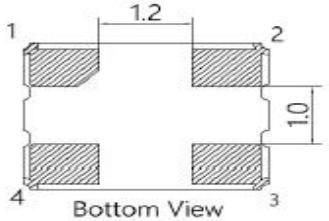
TROQ P/N: RO04000071 REV: A

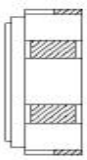
● ELECTRICAL PARAMETERS

产品技术指标	Min	Max	Units
1.Holder Type	OSC 3.2*2.5		
2.Mode of Oscillation	Fundamental		
3.Frequency	4.000000		MHZ
4.Load Capacitance (CL)	15		pF
5.Frequency Tolerance	-20	20	ppm
6.Operating Temperature Range	-40	85	℃
7.Storage Temperature Range	-55	125	℃
8.Supply Voltage(VDD)	1.8-3.3		V
9.“0”Level (VOL)		VDD×0.1	V
10.“1”Level(VOH)	VDD×0.9		V
11.Enable High Voltage(ELH)	VDD×0.7		V
12.Enable Low Voltage(ELL)		VDD×0.3	V
13.Symmetry of Wave From(Symmetry)	45-55		%
14.Current Consumption(IDD)		10.0	m A
15.Rise and Fall Time(Tr,Tf)		5.0	nSec
16.Start time(tosc)		10.0	mSec
17.Aging	± 3		ppm/year
18.Output waveform	CMOS		
19.Other	Moisture Sensitivity Level（零件湿敏等级） Level 1		

OUTLINE DIMENSIONS(UNIT:mm）外形尺寸（单位：mm）



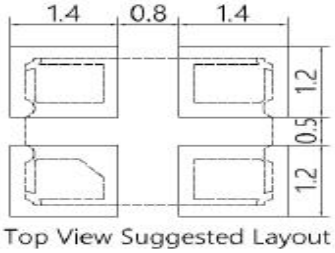




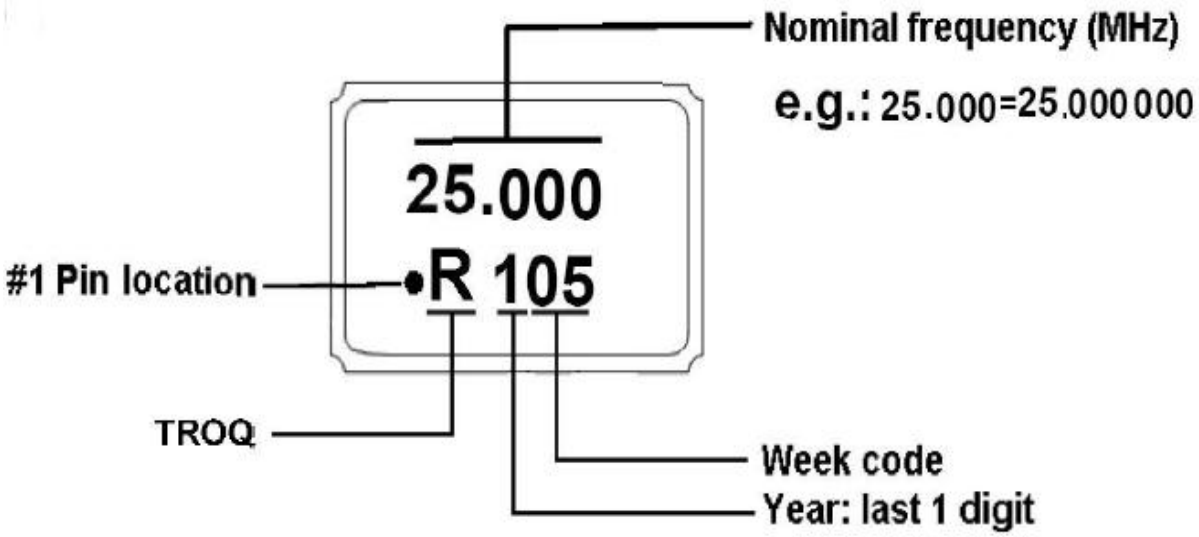
PAD FUNCTION
1: ENABLE CONTROL
2: GND
3: OUT
4: VDD

Enable Control

Pad 1 Input	Pad 3 Output
Level High or Open	Normal Operation
Level Low	Stopped

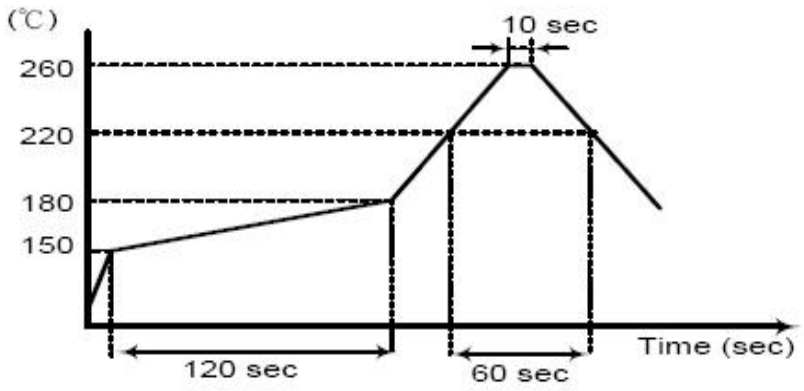


● **Marking （标记）**

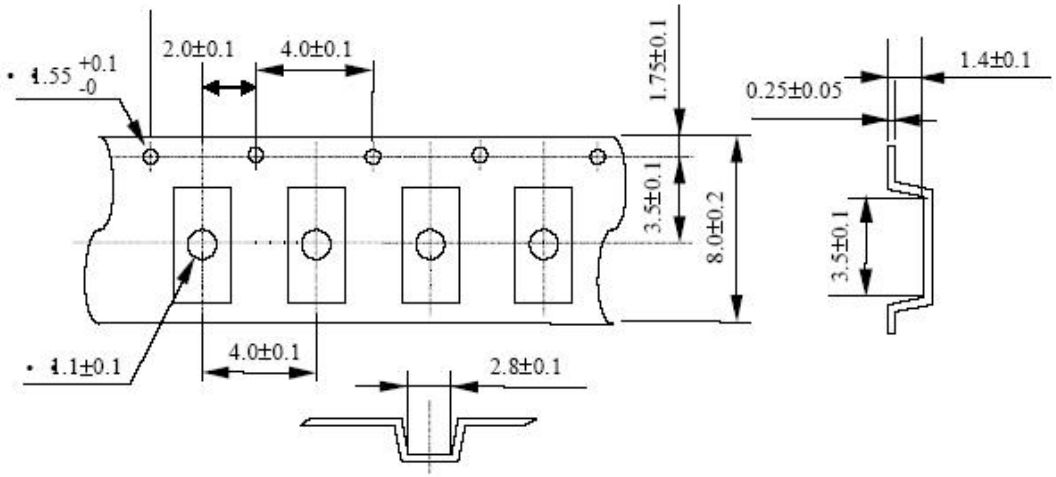

Nominal frequency (MHz)
e.g.: 25.000=25.000 000
25.000
#1 Pin location
R 105
TROQ
Week code
Year: last 1 digit

● **SUGGESTED REFLOW PROFILE （回流焊曲线图）**
Total time:200sec.Max. （总时间：200秒 最大）
Solder melting point:220℃（熔点220 ℃ ）

Profiles Feature（特性）		Pb-Free Assembly
Average Ramp-up Rate(Ts max to Tp)	平均升温速度	3℃/second Max
Preheat ■ Temperature Min (Ts min) ■ Temperature Max (Ts max) ■ Time (ts min to ts max)	预热 最低温度 最高温度 从最低到最高时间	 125℃ 200℃ (60～180) seconds
Time maintained above ■ Temperature(T1) ■ Time(tp)	维持上述时间 温度 时间	 217℃ (60～150) seconds
Peak/Classification Temperature(Tp)	最高点温度	260 ℃
Time within 5℃ of actual Peak Temperature(tp)	高温维持时间	(20～40) seconds
Ramp-down rate	降温速度	6℃/second max
Time 25℃ to Peak Temperature	从25℃到最高温度的时间	8 minutes max
Suggest reflow times	建议 reflow次数	3 Times max



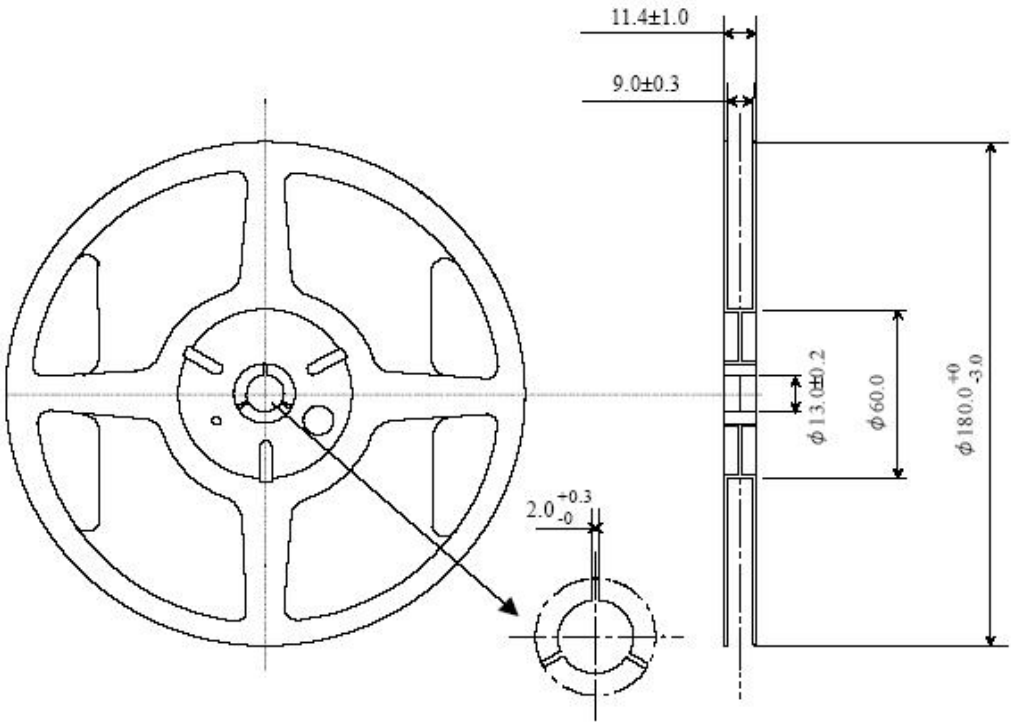
● PACKING（包装） 3Kpcs/REEL



[Size in mm]

8.3. Reel dimension & Outline drawing

Material of the Reel : PS



● RELIABILITY SPECIFICATIONS（信赖度试验）

No	Test Item（测试项目）	Test Conditions（测试条件）	Reference（参考）
1	High Temperature High Humidity Storage (高温、高湿、储存)	Temperature: 85℃±3℃ 温度: 85℃±3℃ Relative Humidity:85%RH 相对湿度: 85%RH Time: 96 Hours 时间: 96小时	JIS C5023
2	High Temperature Storage (高温储存)	Temperature: 125℃±3℃ 温度:125℃±3℃ Time: 96 Hours 时间:96 小时	MIL-STD-883E Method 1005.8
3	Low Temperature Storage (低温储存)	Temperature: -40℃±3℃ 温度：-40℃±3℃ Time: 96Hours 时间：96小时	MIL-STD-883E Method 1013
4	Thermal Shock (温度冲击)	Temperature1:-55℃±5℃ 温度1:-55℃±5℃ Temperature2:85℃±5 ℃ 温度2: 85℃±5 ℃ Temperature change between T1 and T2 5 min T1和T2温度在5分钟内改变 10cycles maintain T1 and T2 for 30 minutes each mone cycle 每次循环30分钟共10次	MIL-STD-202F Method 107 Condition A
5	RESISTANCE TO SOLDER HEAT (耐焊接热)	Solder Temperature: 260℃±5℃ 焊槽温度:260℃±5℃ Time: 10±1 Seconds 时间: 10±1秒	MIL-STD-202F Method 210E
6	Solderability(可焊性)	The solder pot temperature is 245±5℃, dwell time 5±0.5 245±5℃焊锡槽浸润5±0.5秒	J-STD-002B
7	Drop Test (落下试验)	3 Times Free Fall from 75cm height table to 3cm thickness hard wood board 从75cm高度3次跌落到3cm厚硬质木板上	JIS C6701
8	MECHANICAL SHOCK (机械冲击)	Half sine wave,1000 G 半正弦波,加速度1000G 3 Times for all 3 directions X、Y、Z 三个相互垂直方向各三次	MIL-STD-202F Method 213B
9	Vibration (机械振动)	Frequency Range: 10Hz～55Hz 频率范围: 10Hz～55Hz Amplitude: 0.75mm 振幅：0.75mm 2 Hours in each direction, total 6 Hours X、Y、Z 三个相互垂直方向各振动2小时	MIL-STD-883E Method 2007.3
10	Leakage Test (气密性)	Take measurements with a helium Leakage detector 氦质检漏 Leakage Rate≤1×10-3Pa cm3/s 漏率≤1×10^{-3}Pa cm^3/s	MIL-STD-883E